

SYSTEM FOR SUBSTRATE POTENTIAL REGULATION DURING POWER-  
UP IN INTEGRATED CIRCUITS

ABSTRACT OF THE DISCLOSURE

5       An integrated circuit with body-bias inputs coordinated  
by a switch at initial power application. A switch coupled to  
the N-well bias and P-type substrate bias lines of an  
integrated circuit selectively couples the substrate to  
ground or the substrate bias supply, depending upon the state  
10 of the bias supply lines. During power-up and the initial  
application of the N-well bias, the substrate is coupled to  
ground to prevent a leakage induce rise in the substrate  
potential. Upon sensing the presence of the substrate bias  
potential on the substrate bias line, the switch couples the  
15 substrate to the substrate bias line instead of ground. In  
another embodiment, a switch indirectly senses the  
availability of the substrate bias potential by sensing a  
charge pump enable signal.